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1994. POSTER. Page 70 *in* The Wildlife Society *First* Annual Conference Abstracts (September 20-25, 1994, Albuquerque, New Mexico)

NOLTE, DALE L., KEVIN L. KELLY, BRUCE A. KIMBALL, and DAN L. CAMPBELL. Digitalis: A "natural" herbivore repellent. USDA/APHIS/ADC/DWRC, Olympia WA 98512 USA. (DLN). USDA/APHIS/ADC/DWRC, Denver CO 80225 USA. (KLK). USDA,APHIS,ADC,DWRC, Denver CO 80225 USA. (BAK). USDA,APHIS,ADC,DWRC, Olympia WA 98512 USA. (DLC).

Plants naturally avoided by herbivores offer a potential source of aversive agents to inhibit browsing. Rarely ingested by animals, foxglove (*Digitalis purpurea*) is an excellent candidate. We conducted this study to determine whether it is the toxins or other associated compounds that induce the avoidance response of herbivores. Chemical and behavioral assays were used to relate animal responses with the chemical properties of several foxglove extracts. A liquid chromatogram prepared for each extract indicated which extracts contained common toxic glycosides (e.g., digitoxin). Multiple-choice tests were used to determine the relative preference of mountain beaver (*Aplodontia rufa*) for apple cubes treated with these extracts. Mountain beaver avoided some extracts that were void of the common glycosides while they accepted other extracts that contained these glycosides. Therefore, at least the common toxic glycosides were not responsible for the gustatory cues that inhibited intake of foxglove by mountain beaver. These results indicate that foxglove is a probable source of effective non-toxic herbivore repellents.